

**From:** [Brown, Chad \(ECY\)](#)  
**To:** [Osborne, Evan](#)  
**Subject:** RE: Yale TrapRock Carbon Sequestration proposal  
**Date:** Thursday, June 23, 2022 12:44:11 PM

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Sorry—yes- not specifically related to letter. Thanks for asking.  
Chad

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**From:** Osborne, Evan <Osborne.Evan@epa.gov>  
**Sent:** Thursday, June 23, 2022 12:43 PM  
**To:** Brown, Chad (ECY) <CHBR461@ECY.WA.GOV>  
**Subject:** RE: Yale TrapRock Carbon Sequestration proposal

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Chad,  
Assume EPA is OK to send the letter before our meeting? Or would you prefer that we wait?

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**From:** Brown, Chad (ECY) <[CHBR461@ECY.WA.GOV](mailto:CHBR461@ECY.WA.GOV)>  
**Sent:** Thursday, June 23, 2022 12:42 PM  
**To:** Osborne, Evan <[Osborne.Evan@epa.gov](mailto:Osborne.Evan@epa.gov)>  
**Subject:** RE: Yale TrapRock Carbon Sequestration proposal  
Thanks Evan. I will send you a Teams meeting. Chad

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**From:** Osborne, Evan <[Osborne.Evan@epa.gov](mailto:Osborne.Evan@epa.gov)>  
**Sent:** Thursday, June 23, 2022 12:39 PM  
**To:** Brown, Chad (ECY) <[CHBR461@ECY.WA.GOV](mailto:CHBR461@ECY.WA.GOV)>  
**Subject:** RE: Yale TrapRock Carbon Sequestration proposal

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Let's do 11:30AM tomorrow. Will you either send an invite or call me then?

Thanks,  
Evan

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**From:** Brown, Chad (ECY) <[CHBR461@ECY.WA.GOV](mailto:CHBR461@ECY.WA.GOV)>  
**Sent:** Thursday, June 23, 2022 12:33 PM  
**To:** Osborne, Evan <[Osborne.Evan@epa.gov](mailto:Osborne.Evan@epa.gov)>  
**Subject:** RE: Yale TrapRock Carbon Sequestration proposal

Evan- would you be available today or tomorrow for a quick conversation. I just want to convey a few thoughts we have been discussing regarding this project.

Here is my availability if you have time to chat - limited today but have more time tomorrow.

Today-- 1:00 - 2:30.

Tomorrow – 9am-1pm

Thanks, Chad

**Chad Brown** | Water Quality Management Unit Supervisor | Washington Department of Ecology  
[chad.brown@ecy.wa.gov](mailto:chad.brown@ecy.wa.gov) | Desk: 360-407-6128 | Mobile: (b) (6)

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**From:** Osborne, Evan <[Osborne.Evan@epa.gov](mailto:Osborne.Evan@epa.gov)>

**Sent:** Thursday, June 23, 2022 9:34 AM

**To:** Gross, Ryan <[Gross.Ryan@epa.gov](mailto:Gross.Ryan@epa.gov)>; Brown, Chad (ECY) <[CHBR461@ECY.WA.GOV](mailto:CHBR461@ECY.WA.GOV)>; Radcliff, Eugene (ECY) <[erad461@ECY.WA.GOV](mailto:erad461@ECY.WA.GOV)>

**Subject:** RE: Yale TrapRock Carbon Sequestration proposal

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Chad,  
Has Ecology finalized any comments?

Evan

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**From:** Gross, Ryan <[Gross.Ryan@epa.gov](mailto:Gross.Ryan@epa.gov)>

**Sent:** Thursday, June 16, 2022 3:40 PM

**To:** [chbr461@ecy.wa.gov](mailto:chbr461@ecy.wa.gov); Radcliff, Eugene (ECY) <[erad461@ECY.WA.GOV](mailto:erad461@ECY.WA.GOV)>

**Cc:** Osborne, Evan <[Osborne.Evan@epa.gov](mailto:Osborne.Evan@epa.gov)>

**Subject:** RE: Yale TrapRock Carbon Sequestration proposal

Chad,

Those are good questions. EPA is currently working on policy to address those issues for the particular regulatory gray area that the Yale CCL project occupies. The response to the set questions we plan to send to Yale CCL will help us with this policy.

If you'd like to discuss it in more detail, feel free to give me a call.

Also, rest assured that Ecology will have more opportunities to have input on the classification issue. Most of our discussions so far have been internal to EPA as we try to align the regional decisions with national policy makers, but I plan to include the State more centrally going forward.

V/R, Ryan

[Ryan Gross, P.E. \(he/him\)](#)

[Groundwater Protection Program](#)

[US EPA Region 10 – Water Division](#)

[1200 Sixth Ave, Suite 155, MS 19-H16, Seattle, WA 98101](#)

[ph. 206-553-6293](#)

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**From:** Brown, Chad (ECY) <[CHBR461@ECY.WA.GOV](mailto:CHBR461@ECY.WA.GOV)>

**Sent:** Wednesday, June 15, 2022 5:41 PM

**To:** Gross, Ryan <[Gross.Ryan@epa.gov](mailto:Gross.Ryan@epa.gov)>; Radcliff, Eugene (ECY) <[erad461@ECY.WA.GOV](mailto:erad461@ECY.WA.GOV)>

**Cc:** Osborne, Evan <[Osborne.Evan@epa.gov](mailto:Osborne.Evan@epa.gov)>

**Subject:** RE: Yale TrapRock Carbon Sequestration proposal

Hi Ryan,

I will share these questions with the larger team here at Ecology and get back to you ASAP.

At first glance, I am wondering about the following statement in the write-up. If you were to remove the text I highlighted below, would this still be a true statement? If so, why?

I guess I am wondering if there are two questions EPA is trying to get to..... Is this a prelude to commercial operations? AND... Is this site-testing? These seem to be mutually exclusive questions

but are both included in this statement.

EPA does not consider it appropriate to permit CO2 injection wells that are testing the injectivity or appropriateness of an individual formation (e.g., as a prelude to a commercial-scale operation) as Class V experimental technology wells.

After reviewing the EPA's Class VI guidance and the response to public comments, sections on experiments seems to imply that all pre-drilling experiments and modeling must be done using literature review and bench experiments only. Are there any scenarios in which in situ wells that are collecting information about the reactivity of the CO2 deposition would be considered experimental? Or is it that the experimental nature of the project must be to test methods by which carbon sequestration occurs. These are probably difficult to parse out in most experiments but just wondering if this is one of the points.

Sorry to get into the details on this and I hope I am articulating this well enough. I am not objecting to any of EPA's questions, rather I am trying to better understand what specific qualifying elements of this project EPA is trying to evaluate..... Commercial vs. non-commercial? Site characterization vs. injection technology experimentation?

I hope to get back to you on others' input by Friday.

Thanks,

Chad

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**From:** Gross, Ryan <[Gross.Ryan@epa.gov](mailto:Gross.Ryan@epa.gov)>

**Sent:** Wednesday, June 15, 2022 4:29 PM

**To:** Brown, Chad (ECY) <[CHBR461@ECY.WA.GOV](mailto:CHBR461@ECY.WA.GOV)>; Radcliff, Eugene (ECY) <[erad461@ECY.WA.GOV](mailto:erad461@ECY.WA.GOV)>

**Cc:** Osborne, Evan <[Osborne.Evan@epa.gov](mailto:Osborne.Evan@epa.gov)>

**Subject:** RE: Yale TrapRock Carbon Sequestration proposal

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Chad and Eugene,

EPA has finalized the questions that we would like Yale CCL to answer so that we can correctly classify their injection well application. I've attached them here.

At your soonest convenience, please look these over and let me know if Ecology has any objections or issues. We'd like to send these out as soon as possible, so we greatly appreciate any expediency on your part.

V/R, Ryan

Ryan Gross, P.E. (he/him)

Groundwater Protection Program

US EPA Region 10 – Water Division

1200 Sixth Ave, Suite 155, MS 19-H16, Seattle, WA 98101

ph. 206-553-6293

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**From:** Brown, Chad (ECY) <[CHBR461@ECY.WA.GOV](mailto:CHBR461@ECY.WA.GOV)>

**Sent:** Monday, April 4, 2022 2:41 PM

**To:** Gross, Ryan <[Gross.Ryan@epa.gov](mailto:Gross.Ryan@epa.gov)>; Radcliff, Eugene (ECY) <[erad461@ECY.WA.GOV](mailto:erad461@ECY.WA.GOV)>

**Cc:** Osborne, Evan <[Osborne.Evan@epa.gov](mailto:Osborne.Evan@epa.gov)>

**Subject:** RE: Yale TrapRock Carbon Sequestration proposal

Reference for today's meeting: [WAC 173-218-115](#), Specific requirements for Class V wells used to inject carbon dioxide for permanent geologic sequestration.

-----Original Appointment-----

**From:** Gross, Ryan <[Gross.Ryan@epa.gov](mailto:Gross.Ryan@epa.gov)>

**Sent:** Monday, April 4, 2022 12:06 AM

**To:** Gross, Ryan; Brown, Chad (ECY); Radcliff, Eugene (ECY)

**Cc:** Osborne, Evan

**Subject:** Yale TrapRock Carbon Sequestration proposal

**When:** Monday, April 4, 2022 3:30 PM-4:30 PM (UTC-08:00) Pacific Time (US & Canada).

**Where:** Microsoft Teams Meeting

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Chad and Eugene,

I hope this time works for you to meet. Evan and I are also available 4-5.

Sorry about the lateness of my reply. I sent a reschedule notice last week, but it must not have gone through.

V/R, Ryan

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[1@ECY.WA.GOV](mailto:1@ECY.WA.GOV)>

:41 PM

dcliff, Eugene (ECY)

uestration proposal

04 Memo to Ecology.pdf; Carbon TrapRock Whitepaper 1.10.22.pdf

Evan and Ryan,

I have been meaning to set up a meeting for us to discuss a current request that has come to Ecology regarding the an experimental Carbon Sequestration project being proposed by Yale.

We attended a meeting with the project proponents a few weeks ago and the group are being represented by Jay Manning, Cascadia Law. Jay stated that he had reached out to Evan a while ago so you may be aware of the project. Although I don't have the presentation they went through, I have attached the memo they sent to Ecology and a brief overview of the project.

Eugene and I would like to set up an initial meeting with you to discuss the project and how to approach the permitting process. The proponents believe that Ecology's Class V Carbon Sequestration rule may be sufficient for this project, but we want to go through some details with your office prior to a large discussion with the proponent. I had thought that we could add this topic on to our 4/18 meeting but realize that an earlier discussion may be necessary – proponents are wanting some initial feedback from Ecology sooner than we expected.

Would you have available for a meeting in the following time windows?

3/31--- 9am-noon

4/1 --- 9am-noon; 1pm-3pm

4/4 --- 1pm-5pm

If any of these times work, please let us know and I can send out a Teams invite with a short agenda.

Thanks,

Chad

**Chad Brown** | Water Quality Management Unit Supervisor | Washington Department of Ecology

[chad.brown@ecy.wa.gov](mailto:chad.brown@ecy.wa.gov) | Desk: ~~360-407-6128~~ | Mobile: (b) (6)

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